DSM2 Validation and Assessment of Updated USGS Flow Monitoring Station Ratings

Background
The USGS revised the flow ratings for several of their continuous flow monitoring stations. The DSM2 PWT recalibrated the DSM2 model in 1999 to flow data derived from the "old" rating. Further, new flow data has been collected since the last recalibration providing an opportunity for additional validation of the model near the Delta Cross Channel and Mildred Island. The Through Delta Facility Team requested DWR Suisun Marsh Planning to validate the model against the new data flow data collected in Fall 2000 and Fall 2001.

Purpose
1. **Assessment** Assess validation of the DSM2 model against Fall 2000 and Fall 2001 flow data
2. Assess the need to recalibrate DSM2 based on USGS flow rating changes.

Results
1. Old vs. New Rating Comparison
The new and old flow rating comparison is viewable at http://www.iep.ca.gov/cgi-bin/dsm2pwt/recalibration/recalibration.pl . Six two-week historical periods are simulated. The map based output offers clickable flow and stage plots. Note that new and old rating data is not simultaneously available at all locations and all periods. Table 1 contains a matrix showing where and when rating comparisons are available. The table shows the 8(available) USGS flow monitor sites and 6 historical time periods:

- the red dot covers the first 4 periods (years 1991, 1994, 1998)
- the orange dot covers the remaining 2 periods (years 1999 and 2000)

2. Fall 2000 and Fall 2001 Validation
Validation of the DSM2 model against special studies flow data collected at the DCC and Mildred Island are viewable at http://www.iep.ca.gov/cgi-bin/dsm2pwt/validation/validation.pl Comparisons to USGS continuous monitoring flow data are also included. This site shows four month (September-December) validations with each plot showing two-weeks of results. Wind direction and speed data is also included to show the influence of wind on field data.

Note that the addition of continuous flow monitoring data for Jersey Point, Three Mile Slough, Rio Vista, and Dutch Slough does not add up to the Dayflow Delta outflow within reasonable bounds. Considerable effort was put to determining the source of this discrepancy by DES and USGS staff with no resolution as yet.

Questions/Comments
Please contact Kate Le (kle@water.ca.gov) or Chris Enright (cenright@water.ca.gov), if you have any questions or comments.

Table 1: Matrix of USGS Old vs. New Flow Rating Comparison Availability

Site	Aug1991	Mar1994	Aug1994	Oct1998	Oct1999	Jan2000
Sac R. Georgiana (rsac123)		X	X	X	X	X
Threemile Sl.(sltrm004)				X		
Dutch Sl nr Farrar Park (sldut007)				X	X	X
Old R @ Bacon (rold024)	X		X	X	X	X
Old R nr DMC (rold047)						X
SJR @ Stockton (rsan063)						X
Sac R @ Rio Vista(rsac101)				X	X	X
SJR @ Jersey Pt(rsan018)			X	X	X	X